

LABORATORY BULLETIN

DEPARTMENT OF HEALTH & ENVIRONMENTAL SCIENCES, HELENA, MONTANA

No. 61 Editor : David B. Lackman, Ph.D., Administrator, Laboratory Division
April 21, 1976

ANNUAL CONVENTION OF THE MONTANA SOCIETY OF MEDICAL TECHNOLOGISTS
Colonial Motor Hotel and Convention Center, Helena, May 12-15, 1976

This promises to be an exciting and worthwhile event for all medical and public health laboratory workers in Montana. Personnel from our Department are quite involved in the program. Anne Saligren and John DenHerder are among the general co-chairmen. Anne is in charge of physical facilities and has contributed much to planning the convention. John is publicity chairman. Both will serve as moderators for several sessions. Bud Brown and John Hall will put on a workshop on "Maximums and Minimums in Microbiology" which will deal with corresponding capabilities of small and large laboratories. Jim Glosser, D.V.M., from the Department of Livestock, who also serves as our Public Health Veterinarian, will discuss "Zoonosis in Montana: Real and Potential". This will be your chance to ask questions about brucellosis, tularemia, plague, and rabies. Ella Mae Howard will conduct a session on "Water Transmitted Infections in the Hospital". For those of you who may be having difficulty getting a score of 100 on Anne's proficiency tests, there will be a session on "RPR Card Reagin Testing (Wet)".

One of the highlights of the convention promises to be the full-day Toxicology workshop to be conducted by Dr. John Pfaff and Lois Breidenbach on May 12. There will also be a session on Virology put on by Dr. Al Fiscus, Montana State University and Dr. Richard Ushijima, University of Montana. Don't stop at what I have mentioned - there is much more!

Everyone is invited - by the time you receive this, the final program will be out. For questions or advanced registration, contact Carol Dolan, 140 Fairway Drive, Helena, 59601

NATIONAL PROFICIENCY EXAMINATIONS FOR CYTOTECHNOLOGISTS and CLINICAL LABORATORY TECHNOLOGISTS

Results for Montana of the examinations given in November indicate that two out of three candidates in cytotechnology passed, and 16 out of 25 candidates in Clinical Laboratory Technology passed. Considering the difficulty of the examinations, this is an excellent record. Although a specific date hasn't been set, we understand that the third session of these examinations will take place sometime in October, 1976.

VIROLOGY

We are still having difficulty with leakage of the screw-cap test tubes used for transmission of specimens for virus isolation. Please screw caps on tightly and anchor with adhesive tape pulled in the direction of the thread.

Rubella hemagglutination-inhibition : Our major project now is screening female students at the University of Montana for immunity to rubella (German measles). Preliminary results indicate that about 87 percent of these students are immune. When

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we started testing prenatal and premarital serology specimens for rubella antibodies, values above 90 percent immune, sometimes as high as 95 percent, were obtained. The figure for fiscal year 1974, based on 18,682 specimens, was 91.3 percent immune; in 1975, based on 18,945 specimens, the rate was 88.9 percent immune. We feel these figures confirm our impression that there has been a real decline in immunity to German measles.

Influenza : It seems to be over for this season. Now we are gearing up for whatever is in store for the '76 - '77 one. There was no indication that the Group A swine strain was responsible for disease in Montana this season. However, as soon as we receive antigen for the Ft. Dix swine strain, all of the sera submitted for Influenza this year will be screened by hemagglutination inhibition to see if we can detect antibodies to the swine strain. When I did this in 1957 on blood donors from Montana and Idaho, 52.4 percent had antibodies to the Group A, swine virus. In a group of university students born around 1937, only 12.7 percent were positive for swine-strain antibodies. (Lackman, D., Casey, M., Philip, R., Owen, C., and Reinhard, K. A comparison of Influenza in the Northwestern United States caused by A-prime and Asian Influenza viruses. Canadian J. of Public Health 50 : 71-78, February 1959). These findings suggest that the swine virus has been around and that there has been sufficient human exposure to give rise to antibodies. However, it wasn't identified as a cause of serious human illness until the Ft. Dix, New Jersey episode in February, 1976. For the coming season, our emphasis in the laboratory will be on increased serological surveillance, and greater efforts to isolate viruses.

BACTERIOLOGY

Enteropathogenic E. coli : Serologic typing for possible strains of enteropathogenic E. coli will no longer be routinely performed by the State Laboratory. Under special circumstances, testing will be done if adequate epidemiological data is provided. A clinical history of the case consistent with such an etiology must accompany all requests for E. coli typing. Enteropathogenic E. coli usually produces an outbreak of acute, severe diarrhea involving several individuals. When submitting cultures for examination, please indicate the source, clinical diagnosis and age of the individuals from whom cultures were isolated. Also indicate the number of individuals involved in a particular outbreak. Cultures received without this information will be held until such time as epidemiological data is verified. If no further information is received within a reasonable length of time, the cultures will be discarded.

Corynebacterium diphtheriae : About every two to three years Montana has occasion to be reminded that diphtheria is still with us. In August, 1975 an isolate of C. diphtheriae gravis-toxigenic was obtained from Billings. Although numerous cultures were taken from contacts, other isolates were not obtained. Apparently there was little, if any, spreading. In October, 1975 an overwhelming growth of C. diphtheriae was obtained on a blood plate for beta-hemolytic streptococci. This came from a child on the Northern Cheyenne Reservation who had a sore throat. This proved to be an isolate of C. diphtheriae mitis-non-toxigenic. However, there was considerable spread and infection was usually accompanied by a sore throat. Over 25 isolates were made through the middle of December.

Before WW II, many physicians hadn't seen a case of diphtheria. However, when prisoners of war from the Afrika Corps arrived in POW camps in 1943, they brought C. diphtheriae with them. There was a good deal of "surgical" diphtheria due to

infection of open lesions resembling tropical ulcers. These were frequently accompanied by neurologic manifestations. Then after a few episodes of laryngotracheal diphtheria, it became standard practice to keep a tracheostomy kit handy on POW wards. Since 1943, episodes of infection with C. diphtheria have been more common than during the thirties. This is another reason for keeping childhood immunizations current.

Neisseria gonorrhoeae : We don't seem to be making much headway against gonorrhoea. However, the case rate in Montana is much lower than the rate for the nation as a whole. Here are comparable rates :

For fiscal year '75, the national rate was 448 cases per 100,000 population.
For calendar year '75, Montana's rate was 296 cases per 100,000 population.
For fiscal year '74, the national rate was 420 cases per 100,000 population.
For calendar year '74, Montana's rate was 277 cases per 100,000 population.

Here are some results on cultures on females for N. gonorrhoeae :

| | Family Planning Programs | Private Physicians | Health Centers | VD Clinics |
|---|-----------------------------|-----------------------|-------------------|------------|
| National fy '75 percent positive = | 3.2 | 2.0 | 4.1 | 19.0 |
| Montana - 1st quarter cy '76, percent positive = | 1.9 | 9.3 | 11.3 | 25.8 |

We are now processing cultures for N. gonorrhoeae at the rate of 900 per month as compared to 700 per month at the end of fiscal year 1974. It is time to consider whether there isn't over-culturing; especially in the Family Planning programs. Nationally, the emphasis is on reculturing those found to be positive rather than on massive screening programs.

Haemophilus influenzae : One should be reminded from time-to-time concerning the significance of this organism. There are over 10,000 cases of meningitis annually which are caused by H. influenzae. This includes 800 deaths. The death rate from this type of meningitis in children less than five years of age is 3.8 per 100,000. During fy '75, 28 isolates of H. influenzae were obtained in the laboratory.

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We do not do antibiotic sensitivity testing in the State laboratory except for acid-fast organisms in the tuberculosis control program.

These bulletins go mostly to laboratory people. Therefore, I should remind you of a responsibility to pass on pertinent information to physicians whom you serve. Avoid the one-way channels of communication that are all too frequent between laboratorian and medical practitioner.

"The time has come, I believe, when we should have an independent Department of Health unencumbered by the morass of difficulties facing our national welfare apparatus". Arthur C. Guyton, M.D., Ph.D., Professor and Chairman of the Department of Physiology and Biophysics, University of Mississippi; President of the Federation of American Societies for Experimental Biology.

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